

Appln. No. 09/525,477  
Amendment dated September 4, 2003  
Reply to Office Action of March 17, 2003

REMARKS

Claims 1-6, 11-28, 38, 39, 46 and 58-103 are pending in this application. Claims 5, 15, 66-71, 74, 74, 78-83, 85, 87, 88, 93, 96, 100 and 101 have been withdrawn from consideration. Claims 16, 58, 59, 72 and 73 are allowed, and claims 3, 4, 17, 38, 39, 62 and 64 have been found to contain allowable subject matter and would also be allowed if rewritten in independent form and, where appropriate, to attend to corresponding claim objections. Claims 1, 2, 6, 11-14, 18-28, 46, 60, 61, 63, 65, 76, 77, 84, 86, 90-92, 94, 95, 97-99, 102 and 103 have been rejected. Claims 1, 12, 16, 58, 59, 66 (withdrawn), 72, 73, 96 (withdrawn), 100 (withdrawn) and 101 (withdrawn) are independent.

By this Amendment Applicants seek to cancel claims 76, 77, 84, 86, 89-92, 94, 95, 97-99, 102 and 103 and amend claims 1, 12, 62 and 64.<sup>1</sup> Upon entry of this Amendment claims 1, 12, 16, 58, 59, 66 (withdrawn), 72, 73, 96 (withdrawn), 100 (withdrawn) and 101 (withdrawn) will remain independent.

The Examiner is thanked for the indicated allowance of claims 16, 58, 59, 72 and 73, and the indicated allowability of claims 3, 4, 17, 38, 39, 62 and 64. The allowed claims have been maintained unchanged. Allowable claims 62 and 64 have been revised to overcome the formal objections thereto. Further, since the independent claims from which claims 3, 4, 17, 38, 39, 62 and 64 depend are themselves now believed to be allowable, these other claims have been maintained.

<sup>1</sup> This Amendment has been prepared utilizing the format prescribed in the Office of Patent Legal Administration's PowerPoint slide set entitled "Revised Amendment Practice 37 CFR 1.121 - Final Rule Effective Date: July 30, 2003", available on the U.S. Patent and Trademark Office Website.

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**The Objection  
to the Claims**

Claims 62 and 64 were objected to on grounds the term "valve" should be changed to --valve seat--.

Claims 62 and 64 have been revised as the Examiner helpfully suggested, and so favorable reconsideration and withdrawal of this objection are respectfully requested.

**The Rejections Under  
35 U.S.C. § 112, ¶ 2**

Claims 76, 77, 84, 86, 89-92, 94, 95, 97-99, 102 and 103 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of Applicants' invention. In particular, the Examiner noted that these claims were incomplete because they depend from cancelled base claims.

Claims 76, 77, 84, 86, 89-92, 94, 95, 97-99, 102 and 103 have been cancelled without prejudice to or disclaimer of the subject matter recited therein. Accordingly, withdrawal of this claim rejection is respectfully requested.

Claims 1 and 12 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of Applicants' invention. In particular, the Examiner said the expression "with respect to the movable membrane" in these claims was unclear.

Claims 1 and 12 have been carefully reviewed and revised to attend to the point noted by the Examiner. These claims now provide that the movable membrane is located between the coil spring and the valve seat and the coil spring opposes the valve seat.

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The meaning of this aspect of the invention also will be clear to those skilled in the art in view of the specification and drawings, for example, with reference to Figures 8(a) and 8(b).

For all the foregoing reasons, favorable reconsideration and withdrawal of this rejection are respectfully requested.

**The Rejections Under  
35 U.S.C. § 102(b)**

Claims 1, 2, 12-14, 18-28, 60, 61, 63 and 65 were rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Laid-Open Patent Appln. No. 8-174860 to Iida, which the Examiner noted corresponds to U.S. Patent No. 6,000,788. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

As described in claim 1, the present invention is directed to an ink jet recording device having a body, a carriage movable relative to the body, an ink jet recording head provided to the carriage, and an ink supply device mounted on the carriage for supplying ink to the recording head. The ink supply device is constructed as a differential pressure valve including a coil spring, a valve seat and a movable membrane normally contacted elastically with the valve seat by the coil spring, and the valve seat obstructs the flow of ink and only allows ink to flow around the valve seat when the movable membrane is disengaged from the valve seat. The movable membrane is located between the coil spring and the valve seat and the coil spring opposes the valve seat.

Applicants' invention, as set out in claim 1, relates to an ink supply unit that has a differential pressure valve with a coil spring and a movable membrane normally contacted elastically with a valve seat by the coil spring, and which is accommodated in a container having

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an ink storage chamber and an ink supply port. The ink storage chamber communicates with the ink supply port, the ink supply port is adapted to be connected to an ink jet recording head, and the valve seat obstructs the flow of ink and only allows ink to flow around the valve seat when the movable membrane is disengaged from the valve seat. The movable member is located between the coil spring and the valve seat and the coil spring opposes the valve seat.

Applicants respectfully submit that Iida does not anticipate the claimed invention because Iida fails to identically disclose all the features recited in claims 1 and 12. For example, both claims 1 and 12 specify a particular positional relationship between the movable member, the coil spring, and the valve seat. As described in claims 1 and 12, and as shown, for example, in Figs. 5, 6(a-b), 8(a-b) and 10, the movable member (membrane part 54) of the membrane valve 53 is located between the valve seat 57c and the coil spring 51, and the valve seat and coil spring oppose one another. This arrangement is easy to appreciate from Figs. 6(a) and 6(b), which show the valve in closed and open positions, respectively.

Unlike the claimed invention, Iida teaches a valve in which both the valve seat and the spring are located on the same side of the movable membrane, as shown in Figs. 5-6(b) of Iida. That is, in Iida both valve body 20 and spring 21 are located above the elastic membrane 3, and the spring presses the valve body against the elastic membrane (which Iida calls a membrane valve seat) (col. 8, lines 1-7).

Applicants also wish to point out that various features found in certain rejected dependent claims also are not disclosed, much less are suggested, by Iida.

Claim 22, which depends from claim 12, states that the movable membrane has a movable part made of soft material, and a fixing part made of hard material and which is fixed to

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a periphery of the movable part. This aspect of the invention may be clear from Figs. 7(a-e) and page 12, lines 8-18, of the specification.

The rejection of claim 22 in the Office Action is not well-taken because the alleged fixing part (9) taught by Iida is not part of the movable membrane, as claimed, but rather, as shown in Figs. 5-6(c), is an internal wall ("valve assembly") separate from the movable membrane.

Likewise, claim 23 specifies that the ink supply unit of claim 22 has a supporting part formed in an outer periphery of the movable part, and the movable part is connected to the fixing part via the supporting part. This is shown in Figs. 8(a-c) and described at page 17, lines 12-20, of this application. The rejection of claim 22 in the Office Action is not well-taken, however, because the wall 9 is not formed around the outer periphery of the movable valve member.

Similarly, Iida does not suggest claim 24, which provides that in the ink supply unit of claim 12, a movable part is provided to the movable membrane and a supporting part is formed in an outer periphery of the movable part. The membrane shown in Figs. 5-6(b) of Iida is undifferentiated and is merely held between internal and external walls of the cartridge body.

It is well-accepted that for a reference to anticipate a claimed invention, that reference must identically disclose all the features of that invention. Here, as noted above, Iida fails to suggest all the features of independent claims 1 and 12, as well as features of other dependent claims. Accordingly, Iida in no way can anticipate, or even suggest, the claimed invention.

For all the foregoing reasons, favorable reconsideration and withdrawal of this rejection are respectfully requested.

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**The Rejections Under  
35 U.S.C. § 103(a)**

Claim 6 was rejected under 35 U.S.C. § 103(a) as being anticipated by Iida in view of U.S. Patent No. 5,367,328 to Erickson. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

Claim 6 ultimately depends from claim 1, and so incorporates by reference all the features of claim 1, including those features just shown to avoid Iida.

Erickson is only cited as suggesting the use of a main tank and a conduit between that main tank and an ink supply device. The Examiner does not and cannot assert that Erickson suggests all of the features of the claimed invention, and in particular, the features just shown to avoid Iida. Put another way, at best, Erickson shows a check valve with only a ball and chamber in Fig. 4. That valve does not have a spring, and also is not arranged in the manner of base claim 1. Thus, Erickson does not remedy the aforementioned deficiencies of Iida.

Claim 6 therefore avoids Iida and Erickson for the reasons already given in connection with Claim 1.

For all the foregoing reasons, favorable reconsideration and withdrawal of this rejection are respectfully requested.

Claim 11 was rejected under 35 U.S.C. § 103(a) as being anticipated by Iida in view of U.S. Patent No. 5,136,305 to Ims. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

Again, claim 11 ultimately depends from claim 1, and so incorporates by reference all the features of claim 1, including those features just shown to avoid Iida.

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Ims is only cited as suggesting that an ink supply device have an ink injection port and an ink supplementing device. Regardless of whether that is correct, it remains that Ims does not suggest the features of this invention just shown to avoid Iida. Put another way, even if Ims teaches all the Office Action asserts, it remains that Ims does not suggest an ink cartridge having the movable member, valve seat and spring arranged in the manner claimed.

Claim 11 therefore avoids Iida and Ims for the reasons already given in connection with Claim 1.

For all the foregoing reasons, favorable reconsideration and withdrawal of this rejection are respectfully requested.

Claim 46 was rejected under 35 U.S.C. § 103(a) as being anticipated by Iida in view of U.S. Patent No. 5,025,271 to Baker et al. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

Claim 46 ultimately depends from claim 12, and so incorporates by reference all the features of claim 12, including those features just shown to avoid Iida.

The Office Action cites Baker as teaching a film member with both gas permeable and ink repellent properties located between a capillary and an ink storage chamber. Regardless of whether that is true, it remains that Baker does not suggest the features of this invention already shown to avoid Iida. Thus, since Baker does not suggest an ink cartridge having the movable member, valve seat and spring arranged in the manner claimed, Baker fails to remedy the deficiencies of Iida.

Claim 46 therefore avoids Iida and Baker for the reasons already given in connection with Claim 12.

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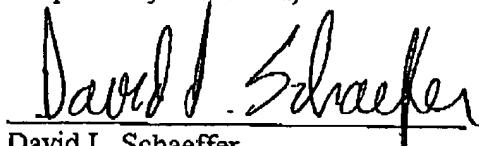
For all the foregoing reasons, favorable reconsideration and withdrawal of this rejection are respectfully requested.

CONCLUSION

In view of the foregoing revisions and remarks, Applicants respectfully request entry of this amendment and submit that entry of this amendment will place the present application in condition for allowance. It is further submitted that entry of this amendment can be approved by the Examiner consistent with Patent and Trademark Office practice, since the changes it makes should not require a substantial amount of additional work by the Examiner. It is believed that the changes presented in this amendment either address matters of form or issues that the Examiner has previously considered.

Favorable consideration and prompt allowance of this application is respectfully requested. In the event that there are any questions, or should additional information be required, please do not hesitate to contact applicant's attorney at the number listed below.

Respectfully submitted,



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